

REMARKS

In the January 29, 2009 Office Action, claims 6-8 were objected to and claims 6-8 stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the January 29, 2009 Office Action, Applicants have amended claims 6-8 as indicated above. Thus, claims 6-8 are pending, with claim 6 being the only independent claim. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Claim Objections

In paragraphs 2 and 3 of the Office Action, claims 6-8 were objected to for informalities. In response to the objection of paragraph 2 of the Office Action, Applicants have amended claim 6 as suggested by the Examiner. In response to the objection of paragraph 3 of the Office Action, Applicants have amended claim 6 to positively recite a receiver, and amended the limitations with respect to the first, second, third and fourth check valves to be consistent with page 16 of the specification and the drawings. Applicants have not amended claim 6 exactly as suggested in paragraph 3 of the Office Action. However, Applicants believe that claims 6-8 are now correct. Accordingly, withdrawal of these objections is respectfully requested.

Rejections - 35 U.S.C. § 103

In paragraph 7 of the Office Action, claims 6-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,417,451 (Spauschus) in view of U.S. Patent No. 2,066,161 (Roessler). In response, Applicants have amended independent claim 6 to more clearly define the present invention over the prior art of record.

In particular, independent claim 6 now requires, *inter alia*, a liquid side refrigerant circuit connecting the heat source side heat exchanger and the utilization side heat exchanger, the liquid refrigerant circuit having a receiver configured to accumulate refrigerant; a heat

source side expansion valve being connected to the receiver of the liquid side refrigerant circuit to expand refrigerant received from the receiver; a bridge circuit having a first check permitting only distribution of the refrigerant from the heat source side heat exchanger to the receiver valve, a second check valve permitting only distribution of the refrigerant from the utilization side heat exchanger to the receiver, a third check valve permitting only distribution of the refrigerant from the heat source side expansion valve to the utilization side heat exchanger without passing through the receiver, and a fourth check valve permitting only distribution of the refrigerant from the heat source side expansion valve to the heat source side heat exchanger without passing through the receiver; and a gas separation apparatus connected to the receiver between the heat source side heat exchanger and the utilization side heat exchanger, the gas separation apparatus including a separation membrane connected to the liquid side refrigerant circuit, with the separation membrane being configured to separate a noncondensable gas remaining inside the liquid side refrigerant circuit from the refrigerant and to discharge the noncondensable gas out of the liquid side refrigerant circuit by operating a compressor and circulating the refrigerant inside the liquid side refrigerant circuit.. Clearly this arrangement is **not** disclosed or suggested by the Spauschus patent and/or the Roessler patent, whether taken singularly or in combination.

Specifically, the Spauschus patent fails to disclose or suggest a four way switching valve or a bridge circuit having first, second, third and fourth check valves, as claimed, as acknowledged in the Office Action. Thus, the Office Action relies on the Roessler patent to allegedly disclose such an arrangement, and asserts that it would be obvious to utilize the bridge circuit and switching valve of the Roessler patent in the air conditioner of the Spauschus patent and to position the gas removal apparatus of the Spauschus patent on the receiver in order to allegedly result in the claimed arrangement. However, in the Roessler patent, the so-called check valves 30, 39, 35 and 47 cannot operate, as now set forth in independent claim 6.

More specifically, none of the so-called check valves 30, 39, 35 and 47 in the Roessler patent are capable of (1) permitting only distribution of the refrigerant from the heat source side expansion valve to the utilization side heat exchanger without passing through the receiver like the third check valve as now claimed, or (2) permitting only distribution of the refrigerant from the heat source side expansion valve to the utilization side heat exchanger

without passing through the receiver like the fourth check valves as now claimed. Rather, the check valves 30 and 39 in the Roessler patent are only capable of supplying refrigerant from the expansion mechanism (at 19) to the other heat exchanger *through the receiver*, and the check valves 35 and 47 in the Roessler patent are only capable of supplying refrigerant *from the receiver to the expansion mechanism* (at 19). See Figure 1 and column 2, lines 7-48. In other words, the relative arrangements between the so-called check valves 30, 39, 35 and 47 and the receiver is different from the arrangement now set forth in independent claim 1. Thus, even if the Spauschus patent were modified by the Roessler patent as suggested in the Office Action, the hypothetical device created would not include all of the features of independent claim 6, as now amended.

Under U.S. patent law, the mere fact that the prior art can be modified does *not* make the modification obvious, unless an *apparent reason* exists based on evidence in the record or scientific reasoning for one of ordinary skill in the art to make the modification. See, KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some "apparent reason to combine the known elements in the fashion claimed." *Id.* at 1741. The current record lacks any apparent reason, suggestion or expectation of success for combining the patents to create Applicants' unique arrangement of independent claim 6, as now amended. Accordingly, withdrawal of this rejection of independent claim 6 is respectfully requested.

Moreover, Applicants believe that dependent claims 7 and 8 are also allowable over the prior art of record in that they depend from independent claim 6, and therefore are allowable for the reasons stated above. Also, dependent claims 7 and 8 are further allowable because they include additional limitations, which in combination with the features of independent claim 6, are not disclosed or suggested in the prior art of record. Specifically, dependent claim 7 requires the receiver is configured to receive the refrigerant flowing from the first check valve or the second check valve at an upper end of the receiver, and the refrigerant flowing into the receiver includes liquid refrigerant and gas refrigerant containing the noncondensable gas such that the liquid refrigerant separates below the gas refrigerant containing the noncondensable gas in the receiver, the liquid side refrigerant circuit includes

Appl. No. 10/560,621
Amendment dated April 16, 2009
Reply to Office Action of January 29, 2009

a pipe with an end disposed in the liquid refrigerant within the receiver to supply the liquid refrigerant from the receiver to the heat source side expansion valve, and the gas separation apparatus is connected to the upper end of the receiver, and is configured to separate the noncondensable gas contained in the gas refrigerant that is accumulated in the receiver above the liquid refrigerant. At least this arrangement is also lacking from the Spauschus patent and/or the Roessler patent, whether taken singularly or in combination. Thus, Applicants respectfully request that this rejection of dependent claims 7-8 also be withdrawn.

* * *

In view of the foregoing amendment and comments, Applicants respectfully assert that claims 6-8 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested. If there are any questions regarding this Amendment, please feel free to contact the undersigned.

Respectfully submitted,

/Patrick A. Hilsmier/
Patrick A. Hilsmier
Reg. No. 46,034

GLOBAL IP COUNSELORS, LLP
1233 Twentieth Street, NW, Suite 700
Washington, DC 20036
(202)-293-0444
Dated: April 16, 2009

S:\04-APR09-YTY\DK-US030324 Amendment (Applicants plural).doc